

Notice of Allowability	Application No.	Applicant(s)	
	10/597,249	ALRADADY ET AL.	
	Examiner	Art Unit	
	Tiffany A. Fetzner	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/16/2010 & the telephonic interview of 10/22/2010.
2. ☒ The allowed claim(s) is/are 1-71.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20101022</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

/T. A. F./
Examiner, Art Unit 2858
571-272-2241

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with **Attorney James R. Stevenson Reg. No 38,755** on **October 22, 2010** along with authorization to charge any necessary fees to applicant's deposit account.
3. The application has been amended as follows:

A) Replace claims 1, 3, 8, 12, 13, 21, 22, 26, 27, 39, 41, 46, 49, 53, 54, 57, 61, 62, 63, 64, 66, 68, 70 and 71 of the August 16, 2010 listing of claims with the following Examiner amended claims 1, 3, 8, 12, 13, 21, 22, 26, 27, 39, 41, 46, 49, 53, 54, 57, 61, 62, 63, 64, 66, 68, 70 and 71.

Claim 1 --- A neurovascular array **configured** for use with a magnetic resonance (MR) system capable of parallel-imaging via a plurality of processing channels, the neurovascular array comprising:

(a) a head coil having:

- (I) a first electrically conductive ring,
- (II) a second electrically conductive ring, and
- (III) a plurality of rods electrically interconnecting said first and said second rings

in order to form a birdcage-like structure therewith,

wherein said rods and said first and said second rings are configured to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures:

- (A) constituting a coil element including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant substructures**, so that each of said

primary resonant substructures is enabled to receive magnetic resonance signals from tissue within a separate field of view thereof, and

(B) providing a source impedance considerably higher than a load impedance to which said primary resonant substructure connects ~~[for]~~ creating a resonant circuit therewith so as to enable said primary resonant substructure (i) to be operatively couplable to one processing channel of the MR system for conveyance of the magnetic resonance signals received thereby (ii) while simultaneously being at least partially decoupled from the other of said primary resonant substructures of said head coil;

(b) an anterior coil having in proximity to said head coil at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof;

(c) a posterior coil having in proximity to said head coil at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof; and

(d) an interface **configured** for enabling said coil elements of said head coil, said anterior coil and said posterior coil to be selectively interconnected to the processing channels of the MR system so that the neurovascular array ~~[can be]~~ **is** selectively ~~[operated]~~ **operable** in a plurality of modes. ---

Claim 3 --- The neurovascular array of **claim 2** wherein said head coil has eight of said coil elements and said anterior and said posterior coils each have two of said other coil elements, **configured** for use with the MR system equipped with at least eight of the processing channels. ---

Claim 8 --- The neurovascular array of **claim 1** wherein each of said primary resonant substructures as said source impedance includes an input resonant circuit

Art Unit: 2858

configured for enabling said primary resonant substructure via a low impedance preamplifier as said load impedance to be

- (i) operatively couplable to one processing channel of the MR system and
- (ii) at least partially decoupled from the other of said primary resonant substructures. ---

Claim 12 --- The neurovascular array of **claim 1** wherein each of said primary resonant substructures further includes at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling said head coil to be tuned according to an offset tuning scheme through which each of said primary resonant substructures is (i) further decoupled from the other of said primary resonant substructures and (ii) still enabled to resonate at an operating frequency of said head coil and thus **[to]** receive the magnetic resonance signals. ---

Claim 13 --- The neurovascular array of **claim 8** wherein each of said primary resonant substructures further includes at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling said head coil to be tuned according to an offset tuning scheme through which each of said primary resonant substructures is (i) further decoupled from the other of said primary resonant substructures and (ii) still enabled to resonate at an operating frequency of said head coil and thus **[to]** receive the magnetic resonance signals. ---

Art Unit: 2858

Claim 21 --- A volume coil **configured** for use with a parallel-imaging compatible magnetic resonance (MR) system, the volume coil comprising:

- (a) a first electrically conductive ring;
- (b) a second electrically conductive ring;
- (c) a plurality of rods electrically interconnecting said first and said second rings

in order to form a birdcage-like structure therewith;

wherein said rods and said first and said second rings are configured to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant substructures**, so that each of said primary resonant substructures is enabled to receive magnetic resonance signals from tissue within a separate field of view thereof; and

(d) each of said primary resonant substructures having a source impedance considerably higher than a load impedance to which said primary resonant substructure connects ~~for~~ creating a resonant circuit therewith so as to enable said primary resonant substructure (i) to be operatively couplable to one processing channel of the MR system in order to convey the magnetic resonance signals received thereby (ii) while simultaneously being at least partially decoupled from the other of said primary resonant substructures of the volume coil. ---

Claim 22 --- The volume coil of **claim 21** wherein each of said primary resonant substructures as said source impedance includes an input resonant circuit **configured** for enabling said primary resonant substructure via a low impedance preamplifier as said load impedance to be (i) operatively couplable to one processing channel of the MR system and (ii) at least partially decoupled from the other of said primary resonant substructures. ---

Art Unit: 2858

Claim 26 --- The volume coil of **claim 21** wherein each of said primary resonant substructures further includes at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling the volume coil to be tuned according to an offset tuning scheme through which each of said primary resonant substructures is (i) further decoupled from the other of said primary resonant substructures and (ii) still enabled to resonate at an operating frequency of the volume coil and thus ~~to~~ receive the magnetic resonance signals. ---

Claim 27 --- The volume coil of **claim 22** wherein each of said primary resonant substructures further includes at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling the volume coil to be tuned according to an offset tuning scheme through which each of said primary resonant substructures is (i) further decoupled from the other of said primary resonant substructures and (ii) still enabled to resonate at an operating frequency of the volume coil and thus ~~to~~ receive the magnetic resonance signals. ---

Claim 39 --- A neurovascular array **configured** for use with a magnetic resonance (MR) system having a plurality of processing channels, the neurovascular array comprising:

- (a) a head coil including:
 - (I) a first electrically conductive ring;

(II) a second electrically conductive ring; and

(III) a plurality of rods electrically interconnecting said first and said second rings to form a birdcage-like structure therewith; wherein said rods and said first and said second rings are configured **in order** to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures constituting a coil element including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant substructures**, so that said primary resonant substructures are isolated from each other via a preamplifier decoupling scheme and an offset tuning scheme thereby enabling each of said primary resonant substructures

(i) to receive magnetic resonance signals from tissue within a separate field of view thereof and

(ii) to be operatively couplable to one processing channel of the MR system in order to convey the magnetic resonance signals received thereby

(iii) while being simultaneously decoupled from the other of said primary resonant substructures;

(b) an anterior coil having in proximity to said head coil at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof;

(c) a posterior coil having in proximity to said head coil at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof; and

(d) an interface **configured** for enabling said coil elements of said head coil, said anterior coil and said posterior coil to be selectively interconnected to the processing channels of the MR system so that the neurovascular array ~~[can be]~~ **is** selectively **operable** ~~[operated]~~ in a plurality of modes. ---

Art Unit: 2858

Claim 41 --- The neurovascular array of **claim 40** wherein said head coil has eight of said coil elements and said anterior and said posterior coils each have two of said other coil elements, for use with the MR system equipped with at least eight of the processing channels. ---

Claim 46 --- The neurovascular array of **claim 39** wherein said preamplifier decoupling scheme involves each of said primary resonant substructures having an input resonant circuit in said short segment of second ring thereof configured for enabling said primary resonant substructure via a low impedance preamplifier to be (i) operatively couplable to one processing channel of the MR system and (ii) decoupled thereat from the other of said primary resonant substructures. ---

Claim 49 --- The neurovascular array of **claim 46** wherein said offset tuning scheme involves in each of said primary resonant substructures at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling each of said primary resonant substructures to be tuned so that signal current induced therein is effectively precluded from interfering with neighboring ones of said primary resonant substructures primarily via said first ring and said rods thereby enabling each of said primary resonant substructures (i) to be decoupled thereat from the other of said primary resonant substructures (ii) while maintaining the ability to resonate at an operating frequency of said head coil and thus ~~to~~ receive the magnetic resonance signals. ---

Art Unit: 2858

Claim 53 --- A volume coil **configured** for use with a parallel-imaging compatible magnetic resonance (MR) system, the volume coil comprising:

- (a) a first electrically conductive ring;
- (b) a second electrically conductive ring;
- (c) a plurality of rods electrically interconnecting said first and said second rings

in order to form a birdcage-like structure therewith;

wherein said rods and said first and said second rings are configured to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant substructures**, so that said primary resonant substructures are isolated from each other via a preamplifier decoupling scheme and an offset tuning scheme thereby enabling each of said primary resonant substructures

- (i) to receive magnetic resonance signals from tissue within a separate field of view thereof and
- (ii) to be operatively couplable to one processing channel of the MR system in order to convey the magnetic resonance signals received thereby
- (iii) while being simultaneously decoupled from the other of said primary resonant substructures. ---

Claim 54 --- The volume coil of **claim 53** wherein said preamplifier decoupling scheme involves each of said primary resonant substructures having an input resonant circuit in said short segment of second ring thereof **configured** for enabling said primary resonant substructure via a low impedance preamplifier to be (i) operatively couplable to one processing channel of the MR system and (ii) decoupled thereat from the other of said primary resonant substructures. ---

Art Unit: 2858

Claim 57 --- The volume coil of **claim 54** wherein said offset tuning scheme involves in each of said primary resonant substructures at least one of:

- (a) a tuning circuit in at least one of said rods thereof;
- (b) a tuning circuit in said short segment thereof of said first ring; and
- (c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling each of said primary resonant substructures to be tuned so that signal current induced therein is effectively precluded from interfering with neighboring ones of said primary resonant substructures primarily via said first ring and said rods thereby enabling each of said primary resonant substructures (i) to be decoupled thereat from the other of said primary resonant substructures (ii) while maintaining the ability to resonate at an operating frequency of the volume coil and thus ~~[to]~~ receive the magnetic resonance signals. ---

Claim 61 --- An array **configured** for use with a magnetic resonance (MR) system having a plurality of **parallel** processing channels, the array comprising:

(a) a volume coil including:

- (I) a first ring at one end of said volume coil, said first ring being electrically conductive;
- (II) a second ring at an other end of said volume coil, said second ring being electrically conductive; and
- (III) a plurality of rods electrically interconnecting said first and said second rings **in order** to form a birdcage-like structure therewith;

wherein said rods and said first and said second rings are configured to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures constituting a coil element including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant**

Art Unit: 2858

substructures, so that said primary resonant substructures are isolated from each other via a preamplifier decoupling scheme and an offset tuning scheme thereby enabling each of said primary resonant substructures

(i) to receive magnetic resonance signals from tissue within a separate field of view thereof and

(ii) to be operatively couplable to one processing channel of the MR system in order to convey the magnetic resonance signals received thereby

(iii) while being simultaneously decoupled from the other of said primary resonant substructures;

(b) a secondary coil having at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof;

(c) a tertiary coil having at least one other coil element **configured** for receiving magnetic resonance signals from tissue within a separate field of view thereof; and

(d) an interface **configured** for enabling said coil elements of said volume coil, said secondary coil and said tertiary coil to be selectively interconnected to the processing channels of the MR system so that the array ~~[can be]~~ **is** selectively **operable** ~~[operated]~~ in a plurality of modes. ---

Claim 62 --- The array of **claim 61** wherein:

(a) said volume coil ~~[is intended for]~~ **usable in** imaging of a head of a patient;

(b) said secondary coil ~~[is intended for]~~ **usable in** imaging carotid structures on one side of a neck of the patient; and

(c) said tertiary coil ~~[is intended for]~~ **usable in** imaging carotid structures on an other side of the neck of the patient. ---

Claim 63 --- The array of **claim 61** wherein:

Art Unit: 2858

(a) said secondary coil ~~[is intended for]~~ usable in imaging a heart of a patient from an anterior perspective; and

(b) said tertiary coil ~~[is intended for]~~ usable in imaging the heart of the patient from a posterior perspective. ---

Claim 64 --- The array of **claim 61** wherein said preamplifier decoupling scheme involves each of said primary resonant substructures having an input resonant circuit in said short segment of second ring thereof configured for enabling said primary resonant substructure via a low impedance preamplifier to be (i) operatively couplable to one processing channel of the MR system and (ii) decoupled thereat from the other of said primary resonant substructures. ---

Claim 66 --- The array of **claim 61** wherein said offset tuning scheme involves in each of said primary resonant substructures at least one of:

(a) a tuning circuit in at least one of said rods thereof;

(b) a tuning circuit in said short segment thereof of said first ring; and

(c) a tuning circuit in said short segment thereof of said second ring;

configured for enabling each of said primary resonant substructures to be tuned so that signal current induced therein is effectively precluded from interfering with neighboring ones of said primary resonant substructures primarily via said first ring and said rods thereby enabling each of said primary resonant substructures (i) to be decoupled thereat from the other of said primary resonant substructures (ii) while maintaining the ability to resonate at an operating frequency of said volume coil and thus ~~[to]~~ receive the magnetic resonance signals. ---

Art Unit: 2858

Claim 68 --- A method of making a volume coil configured for use with a parallel-imaging compatible magnetic resonance (MR) system, the method comprising the steps of:

(a) assembling a first electrically conductive ring and a second electrically conductive ring with a plurality of rods electrically interconnecting said rings in order to form a birdcage-like structure therewith;

(b) configuring said rods and said first and said second rings to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them while electrically sharing one of said rods with each of its neighboring primary resonant substructures; and

(c) isolating said primary resonant substructures from each other via a preamplifier decoupling scheme and an offset tuning scheme so that each of said primary resonant substructures is enabled

(i) to receive magnetic resonance signals from tissue within a separate field of view thereof and

(ii) to be operatively couplable to one processing channel of the MR system for conveyance of the magnetic resonance signals received thereby

(iii) while being simultaneously decoupled from the other of said primary resonant substructures. ---

Claim 70 --- The method of **claim 69** wherein said offset tuning scheme involves in each of said primary resonant substructures at least one of the steps of:

(a) tuning at least one of said rods thereof;

(b) tuning said short segment thereof of said first ring; and

(c) tuning said short segment thereof of said second ring;

~~[for]~~ enabling each of said primary resonant substructures to be tuned so that signal current induced therein is effectively precluded from interfering with neighboring

Art Unit: 2858

ones of said primary resonant substructures primarily via said first ring and said rods thereby enabling each of said primary resonant substructures

(i) to be decoupled thereat from the other of said primary resonant substructures

(ii) while maintaining the ability to resonate at an operating frequency of the volume coil and thus ~~[to]~~ receive the magnetic resonance signals. ---

Claim 71 --- A method of making a volume coil configured for use with a parallel-imaging compatible magnetic resonance (MR) system, the method comprising the steps of:

(a) assembling a first electrically conductive ring and a second electrically conductive ring with a plurality of rods electrically interconnecting said rings in order to form a birdcage-like structure therewith;

(b) configuring said rods and said first and said second rings to produce a plurality of electrically-adjacent primary resonant substructures about the birdcage-like structure, with each of said primary resonant substructures including two of said rods neighboring each other and a corresponding short segment of each of said first and said second rings interconnecting them **while electrically sharing one of said rods with each of its neighboring primary resonant substructures**; and

(c) providing each of said primary resonant substructures with a source impedance considerably higher than a load impedance to which said primary resonant substructure connects for creating a resonant circuit therewith so as to enable said primary resonant substructure (i) to be operatively couplable to one processing channel of the MR system in order to convey magnetic resonance signals received thereby (ii) while simultaneously being at least partially decoupled from the other of said primary resonant substructures of the volume coil. ---

B) Cancel withdrawn claims 72-80 of the August 16, 2010 listing of claims.

The following is an examiner's statement of **Reasons for Allowance**:

4. With respect to **independent claims 1, 21, 39, 53, 61, 68, and 71**: These claims are considered to be allowable over the prior art of record because the prior art of record neither discloses nor suggests an MRI volume coil/neurovascular array apparatus, OR a method of making/configuring a magnetic resonance volume coil/neurovascular array comprising the structural combination of features as connected and arranged, in the **examiner amended independent claims 1, 21, 39, 53, 61, 68, and 71** as set forth in the above examiner amendment. The examiner notes that it is the entire combination of the claim limitations taken as a whole that constitutes both the novelty and non-obviousness of applicant's claims.
5. With respect to **independent claims 2-20, 22-38, 40-52, 54-60, 62-67, 69 and 70**: These claims are considered to be allowable over the prior art of record because the each depend from an examiner amended allowable independent claim.
6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiner's comment

Drawings

7. The full complete replacement drawing sheets submitted with the August 16, 2010 amendment and response, are approved by the examiner. Therefore the drawing objections of the last office action of **April 15, 2010** are rescinded and withdrawn..

Claim Rejections - 35 USC § 112

8. The **35 USC § 112** rejections from the last office action of April 15, 2010 are rescinded in view of applicant's remarks, with respect to the 112 rejections found on page 4 of the August 16, 2010 amendment and response

Prior Art of Record

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2858

- A) Srinivasan** US patent 5,664,568 issued September 9th 1997.
- B) MONSKI, Jr. et al., 7,084,629** US patent **7,084,629** issued August 1, 2006 filed November 27, 2003 with an effective US priority date of November 27, 2002.
- C) Alradady et al., US patent application** publication **2008/0275332** published November 6, 2008, which is the corresponding publication of applicant's instant application and is noted only for the purposes of a complete record.
- D) MONSKI, Jr. et al.,** US patent application publication 2005/0099179 published May 12, 2005 with an effective US priority date of November 27, 2002; which corresponds to the pre-grant publication application of the applied **MONSKI, Jr. et al., 7,084,629 patent.**
- E) Reisker et al.,** US patent 6,344,745 B1 issued February 5, 2002.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday, Wednesday, and Friday-Thursday from 7:00am to 2:10 pm., and on Tuesday and Thursday from 7:00am to 5:30pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Melissa J. Koval**, can be reached at **(571) 272-2121**. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(571) 273-8300**.

12. Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/TAF/
October 27, 2010

Supervisory Patent Examiner (SPE)
Technology Center 2800

/MELISSA J KOVAL/
Supervisory Patent Examiner, Art Unit 2858